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Ref: 8EPR-EP

April 12, 2006

Brian M. Nazarenus, Chair
Water Quality Control Commission
Colorado Department of Public Health and Environment
OED-OPPI-A5
4300 Cherry Creek Drive South
Denver, CO 80246-1530

Re: Section 303(d) Total Maximum Daily Load (TMDL)
Waterbody List (Regulation #93)

Dear Mr. Nazarenus:

Thank you for your submittal of Colorado's Year 2006 Clean Water Act Section 303(d) waterbody list. The State's §303(d) list is found in 2006 Section 303(d) List Water Quality-Limited Segments Requiring TMDLs, Regulation #93 (5 CCR 1002-93) ("Regulation #93") adopted by the Commission on March 14, 2006. The State described its public participation process for development of the Section 303(d) list in the section of Regulation #93 entitled Statement of Basis, Specific Statutory Authority and Purpose; February 2006 Rulemaking. The public participation process included a public rulemaking hearing conducted by the Commission on February 13, 2006. The steps taken by the State to develop its §303(d) list were outlined in its Section 303(d) Listing Methodology; 2006 Listing Cycle.

Based on our review of the State's submittal, EPA has determined that Colorado's 2006 list of water quality limited segments (WQLSs) still requiring TMDLs partially meets the requirements of Section 303(d) of the Clean Water Act ("CWA" or "the Act") and EPA's implementing regulations. Therefore, by this order, EPA hereby partially APPROVES and partially DISAPPROVES Colorado's Section 303(d) list. Specifically, EPA approves the State's decision to list all the waterbodies and associated pollutants identified in Regulation #93 of the State's listing submission and associated priority rankings. EPA disapproves the State's decisions not to include Bear Creek on the list. In particular, EPA believes the portion of Bear Creek included in Segment COPSPE01a (Bear Creek from Evergreen Lake to Harriman Ditch) continues to not fully support its aquatic life use standard. EPA added this waterbody to the State's §303(d) list as recorded in correspondence to the Commission dated June 3, 2005. The reasons for including Bear Creek on the State's §303(d) list are similar to those from the 2004 listing cycle. Further details of our 2006 partial approval/partial disapproval action are provided in the enclosure.

EPA also notes that the State's 2006 §303(d) list has excluded both Red Mountain Creek (segment COGUUN06b) for copper, lead, and zinc and the South Platte River (segment COSPUS15) for cadmium. EPA is deferring action on these waters and pollutants until a later date. For Red Mountain Creek, EPA notes that the Commission is scheduled shortly to take up the issue of water quality standards for this waterbody. For the South Platte River, the State has submitted a cadmium TMDL to EPA that is under review. EPA will take action on Red Mountain Creek after the standards process and on the South Platte River once EPA has approved the TMDL.



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It is current Agency policy that a state has up to 13 years from the time a waterbody/pollutant combination is added to its §303(d) list of WQLSs to address the need for a TMDL. In adding Bear Creek to the State's 2006 §303(d) list EPA assigns a low priority to Bear Creek for TMDL development. This does not indicate that the problems of Bear Creek are not important to address. Rather, the low priority provides the State flexibility in how best to address Bear Creek within its own time frame. We acknowledge the State and local watershed interests are already working in some manner in the Bear Creek watershed. Our hope is that the §303(d) listing will provide further focus on the issues related to this waterbody and promote continued restoration efforts in the watershed.

Our office will seek public comment on its decision to include Bear Creek to the State's 2006 §303(d) list. At the conclusion of the public review period we will re-visit our decision regarding Bear Creek and make a final listing determination. The statutory and regulatory requirements as well as a summary of EPA's review of Colorado's compliance with each requirement, are described in Enclosure 1.

EPA's partial approval of Colorado's Section 303(d) list extends to all waterbodies on the list with the exception of those waters that are within Indian Country, as defined in 18 U.S.C. Section 1151. EPA is taking no action to approve or disapprove the State's list with respect to waters in Indian Country at this time. EPA, or eligible Indian Tribes, as appropriate, will retain responsibilities under Section 303(d) for those waters.

EPA has been in contact with the United States Fish and Wildlife Service (FWS) regarding whether and, if so, how EPA's approval of Colorado's year 2006 Section 303(d) list may affect the continued existence of any endangered or threatened species listed under the Endangered Species Act (ESA) or the designated critical habitat of any such species. EPA has not determined that today's approval may have such an effect. Therefore, EPA has decided to partially approve/ partially disapprove the list contingent upon the outcome of consultation with the FWS.

We appreciate the time and care the Commission has given to the 2006 §303(d) listing process. We would like to also acknowledge the hard work of many members of the Water Quality Control Division staff in this effort.

We will continue to coordinate with you during the upcoming comment period on our action. If you have questions on any of the above information, feel free to contact me (303/312-6598) or Karen Hamilton (303/312-6236) of my staff.

Sincerely,

Original signed by

Max H. Dodson,
Assistant Regional Administrator
Office of Ecosystems Protection and Remediation

Enclosure

cc: Steven Gunderson, Director, Colorado Water Quality Control Division

Enclosure

Review of Colorado's 2006 Section 303(d) Waterbody List

*Attachment to letter from Max H. Dodson, Assistant Regional Administrator,
Office of Ecosystems Protection and Remediation, US EPA, Region VIII
to Brian M. Nazareus, Chair, Water Quality Control Commission*

Date of Transmittal Letter from State: March 21, 2006
Date of Receipt by EPA: March 23, 2006

Purpose

The purpose of this review document is to describe the rationale for EPA's approval of Colorado's 2006 Section 303(d) waterbody list as submitted on March 21, 2006 ("submittal"). The following sections identify those key elements to be included in the list submittal based on the Clean Water Act ("Act") and EPA regulations (See 40 C.F.R. 130.7). EPA reviewed the methodology used by the State in developing the §303(d) list and the State's description of the data and information it considered. EPA's review of Colorado's §303(d) list is based on EPA's analysis of whether the State reasonably considered existing and readily available water quality-related data and information and reasonably identified waters required to be listed.

EPA has concluded that the State developed its Section 303(d) list in partial compliance with Section 303(d) of the Act and 40 C.F.R. Part 130.7. Because Colorado's submission does not include all waters that meet Section 303(d) listing requirements, EPA is partially approving and partially disapproving Colorado's list submission and adding the additional water, pollutant, and corresponding priority to the final 2006 list. In its review of whether the State reasonably considered existing and readily available water quality-related data and information to identify listed waters, EPA relied upon, in part, the prehearing, rebuttal, and supplemental statements as well as testimony provided to the Water Quality Control Commission ("Commission") as part of the Section 303(d) list hearing conducted by the Commission. A more extensive list of references EPA relied upon in its review are included in the last section of this document.

Statutory and Regulatory Background

Section 303(d)(1) of the Act directs States to identify those waters within their jurisdiction for which effluent limitations required by Section 301(b)(1)(A) and (B) are not stringent enough to implement any applicable water quality standard, and to establish a priority ranking for such waters, taking into account the severity of the pollution and the uses to be made of such waters. The Section 303(d) listing requirement applies to waters impaired by point and/or nonpoint sources, pursuant to EPA's long-standing interpretation of Section 303(d).

EPA regulations provide that States do not need to list waters where the following controls are adequate to implement applicable standards: (1) technology-based effluent limitations required by the Act, (2) more stringent effluent limitations required by State or local authority, and (3) other pollution control requirements required by State, local, or federal authority. (See 40 C.F.R. 130.7(b)(1).)

In developing Section 303(d) lists, States are required to assemble and evaluate all existing and readily available water quality-related data and information, including, at a minimum, consideration of existing and readily available data and information about the following categories of waters: (1) waters identified as partially meeting or not meeting designated uses, or as threatened, in the State's most recent Section 305(b) report; (2) waters for which dilution calculations or predictive modeling indicate nonattainment of applicable standards; (3) waters for which water quality problems have been reported by governmental agencies, members of the public, or academic institutions; and (4) waters identified as impaired or threatened in any Section 319 nonpoint assessment submitted to EPA. (See 40 C.F.R. 130.7(b)(5).) In addition to these minimum categories, States are required to consider any other data and information that is existing and readily available. EPA's 1991 Guidance for Water Quality-Based Decisions describes categories of water quality-related data and information that may be existing and readily available. (See Guidance for Water Quality-Based Decisions: The TMDL Process, EPA Office of Water, 1991, Appendix C) ("EPA's 1991 Guidance"). In addition, EPA's guidance on submittal of reports pursuant to Section §303(d) identified categories of information that may constitute existing and readily available data and information (See "Guidance for 2006 Assessment, Listing and Reporting Requirements Pursuant to Sections 303(d), 305(b) and 314 of the Clean Water Act"; July 29, 2005) ("EPA 2006 Listing Guidance"). While States are required to evaluate all existing and readily available water quality-related data and information, States may decide to rely or not rely on particular data or information in determining whether to list particular waters.

In addition to the EPA 2006 Listing Guidance, EPA has published guidance documents that provide approaches for assessing water quality data and information. The documents include Guidelines for Preparation of the Comprehensive State Water Quality Assessments (305(b) Reports) and Electronic Updates: Supplement, Office of Water, EPA-841-B-97-002B, September 1997 ("EPA 305(b) Guidance") and Consolidated Assessment and Listing Methodology, Office of Wetlands, Oceans, and Watersheds, July 2002 ("EPA's CALM Guidance"). The guidance in these documents was also used by EPA in evaluating the manner in which Colorado assessed its data to determine impairment status of waterbodies.

In addition to requiring States to assemble and evaluate all existing and readily available water quality-related data and information, EPA regulations at 40 C.F.R. 130.7(b)(6) require States to include as part of their submissions to EPA documentation to support decisions to rely or not rely on particular data and information and decisions to list or not list waters. Such documentation should include, at a minimum, the following information: (1) a description of the methodology used to develop the list; (2) a description of the data and information used to identify waters; and (3) any other reasonable information requested by the Region.

■ ■ ■

Review of Colorado's Submission

A. Description of the methodology used to develop the list. (§130.7(b)(6)(i))

A description of the listing process, the criteria for listing, and the criteria for determination of TMDL priority is found in the State's Section 303(d) Listing Methodology - 2006 Listing Cycle ("Listing Methodology"). The Listing Methodology was developed through a public process and finalized as a policy at a Water Quality Control Commission administrative action hearing on May 9, 2005. The provisions in Section III. of the Listing Methodology set forth criteria that generally were used to make

decisions regarding which waters to include on the 2006 Section 303(d) List (Regulation #93) and the 2006 monitoring and evaluation ("M&E List"; Regulation #94).

With the exception of Bear Creek (Segment COPSPBE01), the State properly listed waters with sources causing or expected to cause impairment, consistent with Section 303(d) and EPA guidance. Section 303(d) lists are to include all water quality-limited segments ("WQLSs") still needing TMDLs, regardless of whether the source of the impairment is a point and/or nonpoint source. EPA's long-standing interpretation is that Section 303(d) applies to waters impacted by point and/or nonpoint sources. This interpretation has been described in EPA guidance in a 1997 memorandum clarifying certain requirements for 1998 Section 303(d) lists. (See EPA's 1991 Guidance and the August 27, 1997, EPA guidance listed below.) In addition, this interpretation of Section 303(d) is described in detail in a May 23, 1997, memorandum from Geoffrey Grubbs, Director of the Assessment and Watershed Protection Division, EPA Office of Water, to the FACA Workgroup on Section 303(d) Listing Criteria. (See May 23, 1997 and August 8, 1997 references listed below.)

Except for those reasons discussed below in Section G. Basis for Decision to Add Waters to Colorado's 2006 §303(d) List, EPA finds the State's methodology reasonable and sufficient for purposes of Section 303(d).

B. Description of the data and information used to identify waters, including a description of the data and information used by the state as required by section 130.7(b)(5). (§130.7(b)(6)(ii))

Colorado provides a description of the data and information used to develop its list in the Statement of Basis, Specific Statutory Authority and Purpose; February 2006 Rulemaking section of Regulation #93. Information and databases consulted included the State water quality standards, discharge permit system files, and STORET (EPA's national water quality database). Further, the State actively solicited various entities for data and information that could be used in the list development process. The Colorado Water Quality Control Division ("Division") also continues to independently collect and analyze new data on a rotating basin basis and utilizes such data in making listing determinations.

The data and information requirements mentioned in 40 C.F.R. 130.7(b)(5) include, but are not limited to, all the existing and readily available data and information about the following four categories of waters:

. Waters identified by the State in its most recent section 305(b) report as "partially meeting" or "not meeting" designated uses or as "threatened" (§130.7(b)(5)(i))

At the time Colorado's 2006 §303(d) list was established, the final Section 305(b) report for 2006 had not been completed. The State has drafted its 2006 §305(b) report and it is expected to incorporate the State's 2006 §303(d) list. As such, the waters identified in the final §305(b) report as "not supporting" are expected to generally correspond to those waters on the §303(d) list.

. Waters for which dilution calculations or predictive models indicate nonattainment of applicable water quality standards (§130.7(b)(5)(ii))

The State also considered the results of dilution calculations or predictive models which indicate a particular waterbody was threatened or impaired. For the 2006 listing cycle, there were very few if any waters that were included on the final list based on this information.

. Waters for which water quality problems have been reported by local, state, or federal agencies; members of the public; or academic institutions (§130.7(b)(5)(iii))

The State actively solicited various entities for data and information that could be used in the list development process. The State accepted credible data and information that was submitted in accordance with the listing process schedule, whether submitted by the EPA or any other interested party.

In addition, the State used biological assessments from the Colorado Division of Wildlife as a basis for listing waters. This included fish population data, length-frequency histograms, trend data, and information on Species of Critical Concern including native fish species.

The State also relied upon watershed assessment results from US Forest Service hydrologists to list waters. Information from the USFS included physical, chemical, and biological data and information.

. Waters identified by the State as impaired or threatened in a nonpoint assessment submitted to EPA under section 319 of the CWA or in any updates of the assessment (§130.7(b)(5)(iv))

The State evaluated the nonpoint source ("NPS") data and information that had been obtained through its historical NPS assessments. If the data or information met the State's §303(d) credible evidence criteria defined in its Listing Methodology, then the data or information was considered by the State during the development of the §303(d) list. Further, there is general consistency between the §319 NPS projects in the State and the waterbodies on the 2006 §303(d) list.

EPA has reviewed Colorado's description of the water quality-related data and information it considered for identifying waters on the §303(d) list. EPA concludes that the State properly assembled and, except for those reasons discussed below in Section G. Basis for Decision to Add Waters to Colorado's 2006 §303(d) List, evaluated all existing and readily available data and information, including data and information relating to the categories of waters specified in 40 C.F.R. 130.7(b)(5).

C. A rationale for any decision to not use any existing and readily available data and information for any one of the categories of waters as described in §130.7(b)(5) (§130.7(b)(6)(iii))

For purposes of developing a technically sound waterbody list, the State developed credible evidence criteria for data and information used in the 2006 listing process as described in its Listing Methodology. The credible evidence criteria included both monitored as well as evaluated data and information. An example of monitored data being used as a basis for listing is Coal Creek (segment COGUUG11), listed for metals impairment as evidenced by numeric ambient water quality data. An example of evaluated data being used as a basis for listing is Trout Creek and tributaries (segment COSPUS03), listed for impairment due to sediment based on qualitative observational data.

EPA reviewed the State's criteria developed for the 2006 listing process and determined that the rationales for not using certain existing and readily available water quality-related data and information were reasonable except for those situations discussed in Section G. Basis for Decision to Add Waters to Colorado's 2006 §303(d) List below. The State considered the age of the data, quantity of the data, evidence of quality control on the data, and the qualifications of personnel that collected biological or physical data on waterbodies as factors in determining whether particular data and information was sufficiently reliable to use as a basis for listing waters. Consideration of these factors in evaluating water quality-related data and information is consistent with EPA's 305(b) Guidance and EPA's 2006 Listing Guidance, and EPA believes these factors are similarly appropriate for Colorado to consider in evaluating information to determine whether waters should be included on the State's Section 303(d) list. Unless data or information existed for a waterbody that met these criteria, the data and information was generally not used and the waterbody was not listed on the §303(d) list. Colorado developed its credible evidence criteria in the §303(d) Listing Methodology through a state Work Group consisting of representatives from a wide range of stakeholder groups.

EPA notes that for many of those waters that do not have data or information that meet the credible evidence criteria, the State has indicated its intent to conduct an aggressive monitoring program to collect reliable data to use as a basis for determining the quality of these waters. The State intends to add or remove waters from subsequent §303(d) lists as warranted by results of its monitoring efforts within 10 years after a water is first added to the State's M&E List.

EPA has reviewed the State's rationale for not using certain data and information and has found, except for those reasons discussed below in Section G. Basis for Decision to Add Waters to Colorado's 2006 §303(d) List, such rationale reasonable and sufficient for purposes of Section 303(d).

D. Any other reasonable information requested by Regional Administrator. (§130.7(b)(6)(iv))

Except for those situations mentioned in Section G. Basis for Decision to Add Waters to Colorado's 2006 §303(d) List below, EPA concludes that the State has provided good cause for removing previously-listed waters from its Section 303(d) list and for excluding other waters. Since EPA regulations require only those WQLSs still requiring TMDLs to be listed, where certain other controls are not sufficient to attain water quality standards, waters for which TMDLs have been developed and approved need not be included on the Section 303(d) list. Waters for which the State has information showing that applicable standards are being met also are not required to be listed.

E. Prioritization of waters on the list taking into account the severity of the pollution and the uses to be made of such waters; the prioritization shall specifically include the identification of waters targeted for TMDL development in the next two years (§130.7(b)(4))

EPA regulations interpret the requirement in Section 303(d)(1)(A) of the Clean Water Act that States establish a priority ranking for listed waters. The regulations at 40 C.F.R. 130.7(b)(4) require States to prioritize waters on their Section 303(d) lists for TMDL development, and also to identify those WQLSs targeted for TMDL development in the next two years. In prioritizing and targeting waters, States must, at a minimum, take into account the severity of the pollution and the uses to be made of such waters. (See Section 303(d)(1)(A).) As long as these factors are taken into account, the Act provides that it is the States that establish priorities rather than EPA. States may consider other factors relevant to prioritizing waters for TMDL development, including immediate programmatic needs, vulnerability of particular waters as aquatic habitats, recreational, economic, and aesthetic importance of particular waters,

degree of public interest and support, and state or national policies and priorities. (See 57 Fed. Reg. at 33040, 33045 (July 24, 1992), and EPA's April 1991 Guidance listed below.)

The State provided a discussion regarding its prioritization method starting in Section IV of the 2006 Listing Methodology. The method resulted in assigning a "High," "Medium," or "Low" priority to each of the waters on the list. The prioritization method included consideration of primary factors such as the severity of the problem and the use classification of the waterbody, and secondary factors such as stakeholder readiness, ecological importance of the waterbody and resident aquatic species, programmatic needs, and court orders. The State acknowledges that there are some TMDLs that are a high priority based on these factors, but are also complex TMDLs. In such cases, the development of TMDLs may take longer than that of simple, lower priority TMDLs that are begun after the high priority TMDLs.

EPA reviewed the State's priority ranking of listed waters for TMDL development, and concludes that the State properly took into account the severity of pollution and the uses to be made of such waters, as well as other relevant factors. EPA has found the waterbody prioritization used by Colorado as reasonable and sufficient for purposes of Section 303(d).

F. Identification of the pollutants causing or expected to cause violation of the applicable water quality standards (§130.7(b)(4))

The State identified the pollutants causing or expected to cause violation of the applicable water quality standards, including those pollutants that have no corresponding numeric standard in the State standards (e.g. sediment). The State's identification of the relevant pollutants is found on the §303(d) list.

EPA concludes that the State has appropriately identified pollutants causing or expected to cause exceedences of applicable water quality standards.

G. Basis for Decision to Add Waters to Colorado's 2006 §303(d) List

The following provides the basis for EPA's disapproval of Colorado's decision to not list Bear Creek, Segment COSPBE01a year 2006 §303(d) list and identifies temperature (as it relates to heat gain in the stream) as the pollutant contributing to the aquatic life use impairment. Further, EPA has provided a "low" priority ranking for TMDL development for this waterbody. The "low" priority does not indicate that the problems of Bear Creek are not important to address. Rather, the low priority provides the State flexibility in how best to address Bear Creek within its own time frame.

Based on its initial review of the final list submission, EPA determined that Bear Creek was improperly excluded from the State's list because it is not meeting applicable water quality standards. The definition of "applicable water quality standards" for purposes of §303(d) listing includes numeric criteria, narrative criteria, waterbody uses (e.g., designated uses), and antidegradation requirements. (See 40 C.F.R. 130.7(b)(3).) For Bear Creek, the water quality standard not being met is its Class 1 cold water aquatic life use.

EPA believes Bear Creek qualifies as a water quality-limited segment ("WQLS") where it is known that water quality does not meet applicable water quality standards or is not expected to meet applicable water quality standards, even after the application of the technology-based effluent limitations required by sections 301(b)(1)(A) and (B) of the Clean Water Act. As such, Bear Creek should be included on the State's year 2006 list of WQLSs in need of TMDLs.

EPA will solicit public comments on the addition of Bear Creek to the State's list and, following consideration of any comments received, will transmit a final determination regarding the Creek to the State for incorporation in its §303(d) list. The basis for adding Bear Creek to the State's list is discussed below.

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Bear Creek/temperature/low priority
(Segment COSPBE01a; Evergreen Lake to Harriman Ditch)

Water Quality Standard Exceeded

This segment is classified for cold water aquatic life, recreation, water supply, and agriculture uses. EPA believes this waterbody does not currently meet all applicable water quality standards. In particular, the Creek's Class 1 cold water aquatic life use classification is not fully being met. This view seemed to be shared by most parties at the list hearing. In its rebuttal statement to the Commission, the Division concluded that this waterbody was impaired as evidenced by fisheries data; data that *"....showed a strong departure from the expected populations."*¹ Further, the Division of Wildlife made the observation in its rebuttal statement² that *"Trout biomass estimates in 2005 were still below those recorded prior to the drought."*

Biological data, including fisheries data, were used to determine that the aquatic life use standard was not being met. This data included length-frequency, presence-absence, and population estimates and were used by the Division to conclude that there exists a depressed aquatic life community in the upper reaches of the Bear Creek segment even after the conclusion of a drought period³ and return to a normal flow regime. (See the discussion on pp. 10-11 below.)

The State's methodology for listing waters on its §303(d) list provides for the listing of waters based on biological assessment data. According to the Listing Methodology, biological assessments will typically consider measurable conditions or features within an affected segment in comparison to an "expected condition." For aquatic life uses, impairment is demonstrated when the biological community metrics reflect a condition that is significantly less than the expected or reference condition. The Division concluded that, although there was a partial recovery of the Bear Creek fishery after the 2002 drought, the fish biomass still indicated an impaired condition in the upper reaches of this segment.¹

¹ See "Rebuttal Statement of the Water Quality Control Division in the Matter of the 2006 List of Water-Quality-Limited Segments Requiring Total Maximum Daily Loads (Regulation No. 93), and 2006 Monitoring and Evaluation List (Regulation No. 94)" (February 1, 2006).

² See "Responsive Prehearing Statement of the Colorado Division of Wildlife in the Matter of the 2006 List of Water-Quality-Limited Segments Requiring Total Maximum Daily Loads (Regulation No. 93), and 2006 Monitoring and Evaluation List (Regulation No. 94)" (January 4, 2006).

³ Drought conditions mentioned in this document are considered to result in in-stream flows that are less than the 1-in-3 year recurrence flows.

Listing of Biologically-Impaired Waterbodies

The conclusion from the State that Bear Creek is biologically impaired is key to understanding EPA's action on Bear Creek. The State and EPA agree that this waterbody is biologically impaired, based on assessment of the fisheries data. The State and EPA differ regarding their policies on when to list waters that demonstrate a biological impairment. The State's listing methodology states "*Water bodies that are impaired but it is unclear whether the cause of impairment is attributable to pollutants as opposed to pollution will be placed on the M&E list.*" (See Listing Methodology at part III.D.1.)

This is in contrast with EPA's guidance³ which states:

5. Must Category 5 [i.e., a state's §303(d) list] include an impaired segment if the specific pollutant causing the impairment has not been identified? Yes, if a designated use is not supported and the segment is impaired or threatened, the fact that the specific pollutant is not known does not provide a basis for excluding the segment from Category 5. These segments must be listed unless the state can demonstrate that no pollutant(s) causes or contributes to the impairment.

EPA's guidance has been consistent on this issue for the 2002, 2004, and 2006 listing cycles. For Bear Creek, the State has not demonstrated that no pollutant(s) causes or contributes to the impaired condition. Indeed, the Division wrote to the Commission in its rebuttal statement⁴ that pollutants may be involved in some way with the impaired condition by stating that "*...it remains unclear whether depressed trout numbers in the upper reaches reflects an ongoing recovery period or is the result of one or more physical and/or chemical characteristics functioning individually or together to cause impairment.*"

The inclusion of Bear Creek on the State's list should be determined based on whether it is meeting standards and not on whether the sources and causes of any standards exceedance are fully understood. For many waters listed on state 303(d) lists, further monitoring and evaluation need to occur to fully understand the reason for the impairments prior to developing a TMDL or alternative strategy. The failure of Bear Creek to meet its standards may not be fully understood, but this is not a justification to exclude it from the 303(d) list. Indeed, the Act, EPA regulations and guidance, and previous case precedence indicate the benefit of listing waters as soon as impairment is determined, to minimize continued degradation of impaired waterbodies while investigating the nature and source of the impairment.

Role of the Drought in the Biological Condition of Bear Creek

It is important to note that Colorado's water quality standards allow for exceedences of certain

³ See "Guidance for 2006 Assessment, Listing and Reporting Requirements Pursuant to Sections 303(d), 305(b) and 314 of the Clean Water Act"; Office of Water; United States Environmental Protection Agency (July 29, 2005).

⁴ See "Rebuttal Statement of the Water Quality Control Division in the Matter of the 2006 List of Water-Quality-Limited Segments Requiring Total Maximum Daily Loads (Regulation No. 93), and 2006 Monitoring and Evaluation List (Regulation No. 94)" (February 1, 2006).

standards under conditions of drought⁵. As such, EPA inspected conditions of Bear Creek before and after the 2002 drought. In its proponents prehearing statement⁶ EPA concluded, as it did during the 2004 listing cycle, that there were declining fish populations and fish kills observed by Division of Wildlife prior to the drought and continued impaired conditions after the drought. Most important, the Division has noted that portions of Bear Creek have been able to recover to “expected conditions” after the drought, but there remain portions that have not recovered (“...there is sufficient evidence demonstrating the aquatic life use is impaired along the upper reaches of Bear Creek.”) Specifically, the upper reaches display a significant and continued reduction in the population of adult brown trout, a naturally reproducing species.

Both the observation that the fishery was stressed prior to the 2002 drought and that only portions of Bear Creek have recovered after the drought indicate there may be additional stressors beyond those associated with the drought.

Further, it is not clear, although parts of Colorado experienced a multi-year drought, that the flows in Bear Creek itself in 2002 were far below the critical low flow as defined by the State. The Division stated in its rebuttal statement⁷ to the Commission for the 2004 listing cycle that it believed there was sufficient flow present in the Bear Creek segment of concern to provide sufficient habitat for trout as evidenced by effluent flows from the wastewater treatment plants. Also, the State uses the 30 day, 3 year (“30E3”) and 1 day, 3 year (“1E3”) statistical low flows above which standards are expected to be met⁸. As seen in Figure 1, the station above the

⁵ The following provides an excerpt from Colorado’s water quality standards pertaining to exceedences due to natural conditions (emphasis added)

Part 31.7(1)(b) Numeric Standards

A numeric standard may be assigned by the Commission either to apply on a statewide basis or to specific state surface waters. A numeric standard will be assigned by the Commission when it is presented with evidence that a particular numeric level for a parameter is the suitable limit for protecting the classified use. A numeric standard consists of a numeric level and may include a description as to how that numeric level is to be measured. Numeric standards will include appropriate averaging periods and appropriate frequencies of allowed excursions. A numeric standard may be exceeded due to temporary natural conditions such as unusual precipitation patterns, spring runoff or drought. Such uncontrollable conditions are not cause for changing the numeric standard. (Emphasis added.) (Ref. The Basic Standards and Methodologies for Surface Water (5 CCR 1002-31) Regulation No. 31; Colorado Department of Public Health and Environment; Water Quality Control Commission; Effective October 30, 2001)

⁶ See EPA’s “Proponent’s Prehearing Statement of United States Environmental Protection Agency; Region VIII; Public Rulemaking Hearing Before the Colorado Water Quality Control Commission Regarding Proposed Revisions to Commission Regulation No. 93, Water Quality-Limited Segments Requiring Total Maximum Daily Loads (5CCR 1002-93) and Regulation No. 94 Colorado’s Monitoring and Evaluation List (5CCR 1002-94)” (December 6, 2005).

⁷ See the “Rebuttal Statement of the Water Quality Control Division in the Matter of the 2004 List of Water-Quality-Limited Segments Requiring Total Maximum Daily Loads (Regulation No. 93), and 2004 Monitoring and Evaluation List (Regulation No. 94)” (February 25, 2004).

⁸ See section 31.9(1) Low Flow Exceptions of Colorado’s Basic Standards and Methodologies for Surface Water (5 CCR 1002-31).

impaired reach of Bear Creek experienced flows less than the 30E3⁹ for less than one month during the summer of 2002 and the lowest 30 day average was still close to the 30E3.

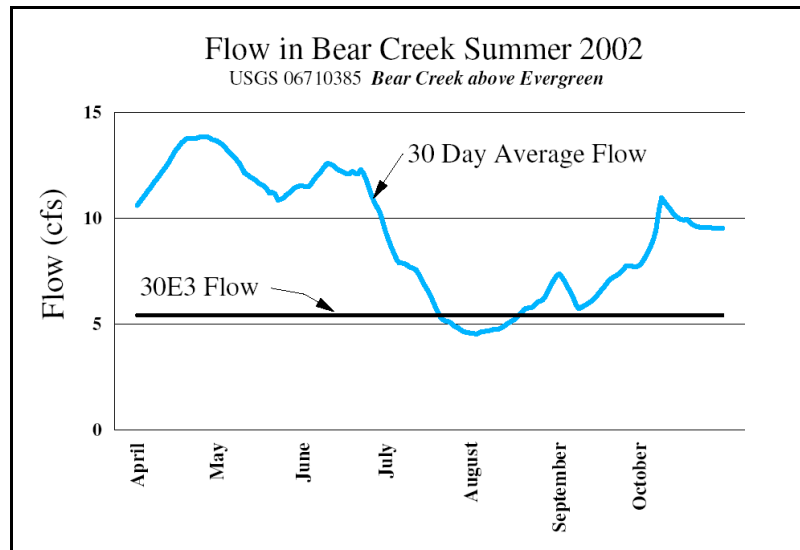


Figure 1. Flow in Bear Creek during summer of 2002.

Role of Temperature in Bear Creek

The biological impairment of Bear Creek and its failure to fully meet its aquatic life use is adequate justification to include Bear Creek on the State's §303(d) list. According to EPA, a specific pollutant known to be contributing to a waterbody's impairment does not have to be identified prior to listing the impaired water. In the case of Bear Creek, however, there has been a history of high temperatures as addressed in the Division's testimony¹⁰ during the 2004 listing cycle. Further, the Division of Wildlife notes in its 2006 responsive prehearing statement¹¹ that *"(I)t is important to note that daily maximum temperatures in this segment can exceed the suggested maximum weekly average temperature (~20 °C), and approach the upper incipient lethal temperatures (~25 °C) for brown trout and rainbow trout."*

The Division's Aquatic Life Use Attainment Assessment Form for Bear Creek, as included in the Division's Exhibit 4/5 for the listing hearing, notes the removal of riparian habitat and channelization of the Creek. These conditions lend themselves to high ambient water

⁹ Flows from USGS station 06710385 Bear Creek above Evergreen from 1985 - 2003 were used to calculate the 30E3 for Bear Creek.

¹⁰ See "Rebuttal Statement of the Water Quality Control Division in the Matter of the 2004 List of Water-Quality-Limited Segments Requiring Total Maximum Daily Loads (Regulation No. 93), and 2004 Monitoring and Evaluation List (Regulation No. 94)" (February 25, 2004).

¹¹ See "Responsive Prehearing Statement of the Colorado Division of Wildlife in the Matter of the 200 List of Water-Quality-Limited Segments Requiring Total Maximum Daily Loads (Regulation No. 93), and 2006 Monitoring and Evaluation List (Regulation No. 94)" (January 4, 2006).

temperatures as observed in the past. EPA stated in its Responsiveness Prehearing Statement¹² that it believes these conditions are still present and the risk of high temperatures in the Creek continues at times of low flow.

The risk of high temperatures in Bear Creek is evidenced by evaluating the pattern of in-stream flows along with ambient temperatures in the stream. The Division reported in its Exhibits 4/5 to the Commission that the recommended maximum weekly average temperature (“MWAT”) was exceeded 4 times during July 2002. As discussed above, the flows during this period were not much lower than the 30E3 flow threshold above which standards are still expected to be met. The Division also noted in its Exhibits 4/5 that the MWAT was met during the last three year period. By inspecting the flow regime, this could be expected since the lowest summertime flows in Bear Creek during the last three years have been between 4 to over 20 times the 30E3. It would also be expected that temperatures of Bear Creek would again approach and likely exceed standards under a flow regime near the critical 30E3 low flow.

Again, as stated in its responsiveness prehearing statement to the Commission, EPA believes the conditions that have resulted in an impaired condition for Bear Creek have not changed. The poor physical habitat that contributes to high in-stream temperatures still exists. Likewise, there is evidence that high temperatures could contribute to the fisheries impairment.

Priority

A low priority has been assigned to this listing to allow the state the flexibility to perform any needed monitoring to further investigate the sources and causes of the biological impairment of Bear Creek prior to determining a course of action. It is the hope of EPA that all the stakeholders within this watershed will work together to chart out a plan of restoration for Bear Creek.

H. Documents used in review of Colorado's §303(d) waterbody submittal

The following list of documents were used directly or indirectly as a basis for EPA's review of the State's §303(d) waterbody list. This list is not meant to be an exhaustive list of all records reviewed, but to provide the primary documents the Region relied upon in making its decisions to approve the State's list. EPA consulted all the prehearing and rebuttal statements submitted to the Commission in reference to its deliberations in the matter of the 2006 List of Water-Quality-Limited Segments Requiring Total Maximum Daily Loads (Regulation No. 93). Further, EPA representatives were in attendance at the Commission's hearing on Regulation No. 93 on February 13, 2006 and listened to all the testimony provided to the Commission on the matter.

December 28, 1978 Federal Register Notice, *Total Maximum Daily Loads Under Clean Water Act*, finalizing EPA's identification of pollutants suitable for TMDL calculations, 43 Fed. Reg. 60662

¹² See EPA's "Responsive Prehearing Statement of United States Environmental Protection Agency; Region VIII; Public Rulemaking Hearing Before the Colorado Water Quality Control Commission Regarding Proposed Revisions to Commission Regulation No. 93, Water Quality-Limited Segments Requiring Total Maximum Daily Loads (5CCR 1002-93) and Regulation No. 94 Colorado's Monitoring and Evaluation List (5CCR 1002-94)" (January 4, 2006).

January 11, 1985 Federal Register Notice, *40 C.F.R. Parts 35 and 130, Water Quality Planning and Management: Final Rule*, 50 Fed. Reg. 1774

April 1991, "Guidance for Water Quality-Based Decisions: The TMDL Process," EPA 440/4-91-001.

July 24, 1992 Federal Register Notice, *40 C.F.R. Parts 122, 123, 130*, revision of regulation, 57 Fed. Reg. 33040

August 8, 1997 memorandum from Robert Perciasepe, Assistant Administrator, Office of Water, to Regional Administrators and Regional Water Division Directors entitled "New Policies for Establishing and Implementing TMDLs."

40 C.F.R. Part 130 Water Quality Planning and Management

May 23, 1997 memorandum from Geoffrey H. Grubbs, Director, Assessment and Watershed Protection Division, Headquarters, US EPA to FACA Workgroup on Section 303(d) Listing Criteria, regarding "Nonpoint Sources and Section 303(d) Listing Requirements."

September, 1997 guidance from Office of Water, Headquarters, US EPA regarding Guidelines for Preparation of the Comprehensive State Water Quality Assessments (305(b) Reports) and Electronic Updates: Supplement, EPA-841-B-97-002B.

May 31, 2001 exhibits 5,8, and 12 of the Rebuttal Statement of the Water Quality Control Division for the Revisions to the Classifications and Numeric Standards for the Gunnison and Lower Dolores River Basins (Regulation No.35).

September 30, 2001 (last amended) The Basic Standards and Methodologies for Surface Water 3.1.0 (5CCR 1002-31); Colorado Department of Public Health and Environment, Water Quality Control Commission.

August 21, 2002 memorandum from Bob McConnell and Joni R. Nuttle (Colorado Water Quality Control Division) to Scott Klarich, Cary Pilon, and Ron Falco (Colorado Water Quality Control Division, regarding "Bear Creek."

July 21, 2003 guidance from the USEPA entitled Guidance for 2004 Assessment, Listing and Reporting Requirements Pursuant to Sections 303(d) and 305(b) of the Clean Water Act, Watershed Branch, Assessment and Watershed Protection Division, Office of Wetlands, Oceans, and Watersheds, US EPA.

September 9, 2003 report entitled Colorado's Section 303 (d) Listing Methodology published by the Colorado Department of Public Health and Environment.

April 2004 305(b) report entitled Status of Water Quality in Colorado - 2004 published by the Colorado Department of Public Health and Environment.

February 3, 2004 Prehearing Statement of the Water Quality Control Division in the Matter of the 2004 List of Water-Quality-Limited Segments Requiring Total Maximum Daily Loads (Regulation No. 93, and 2004 Monitoring and Evaluation List (Regulation No. 94).

February 3, 2004 Prehearing Statement of Trout Unlimited in the Matter of Rulemaking Hearing to Establish Colorado's 2004 List of Water Quality Limited Segments Still Requiring TMDL's, 5 CCR-1002-93, and the Monitoring and Evaluation List, 5 CCR 1002-94.

February 25, 2004 Rebuttal Statement of the Colorado Division of Wildlife in the Matter of the 2004 List of Water Quality Limited Segments Requiring (sic) Total Maximum Daily Loads (Regulation No.93) and 2004 Moniotoirng (sic) and Evaluation List (Regulation No. 94).

February 25, 2004 Rebuttal Statement of the Water Quality Control Division in the Matter of the 2004 List of Water-Quality-Limited Segments Requiring Total Maximum Daily Loads (Regulation No. 93, and 2004 Monitoring and Evaluation List (Regulation No. 94).

March 1, 2004 letter from Paul D. Frohardt, Administrator, Colorado Water Quality Control Commission to Max Dodson, Assistant Regional Administrator for the Office of Ecosystems Protection and Remediation, US EPA Region VIII transmitting Colorado's 2002 Section 303(d) List and Colorado's 2002 Monitoring and Evaluation List.

March 17, 2004 letter from Chris J. Wiant, Chair, Colorado Water Quality Control Commission to Max Dodson, Assistant Regional Administrator for the Office of Ecosystems Protection and Remediation, US EPA Region VIII transmitting Colorado's 2004 Section 303(d) List.

March 17, 2004 regulation entitled "Regulation #93 2004 Section 303(d) List Water-Quality-Limited Segments Requiring TMDLs" adopted March 17, 2004, Effective May 31, 2004; Colorado Department of Public Health and Environment; Water Quality Control Commission.

March 17, 2004 regulation entitled "Regulation #94 Colorado's Monitoring and Evaluation List" adopted March 17, 2004, Effective May 31, 2004; Colorado Department of Public Health and Environment; Water Quality Control Commission.

January 3, 2005 letter from Karen Hamilton, Chief, Water Quality Unit, US EPA Region VIII to Sarah Johnson, Water Quality Control Division, Colorado Department of Public Health and Environment regarding "Review Comments on Colorado's Section 303(d) Listing Methodology (v. 2)".

April 13, 2005 letter from Karen Hamilton, Chief, Water Quality Unit, US EPA Region VIII to Paul Frohardt, Administrator, Colorado Water Quality Control Commission regarding "Comment on Section 303(d) Listing methodology (3/1/2005 version)".

July 29, 2005 guidance from the USEPA entitled Guidance for 2006 Assessment, Listing and Reporting Requirements Pursuant to Sections 303(d), 305(b) and 314 of the Clean Water Act; Office of Water; United States Environmental Protection Agency (July 29, 2005).

December 6, 2005 Proponent's Prehearing Statement of the Water Quality Control Division in the Matter of the 2006 List of Water-Quality-Limited Segments Requiring Total maximum Daily Loads (Regulation No. 93), and 2006 Monitoring and Evaluation List (Regulation No. 94).

December 6, 2005 Proponent's Prehearing Statement of the United States Environmental Protection Agency; Region VIII; Public Rulemaking Hearing Before the Colorado Water Quality Control Commission Regarding Proposed Revisions to Commission Regulation No. 93, Water Quality-Limited

Segments Requiring Total Maximum Daily Loads (5CCR 1002-93) and Regulation No. 94 Colorado's Monitoring and Evaluation List (5CCR 1002-94).

January 4, 2006 Responsive Prehearing Statement of the Colorado Division of Wildlife in the Matter of the 2006 List of Water-Quality-Limited Segments Requiring Total maximum Daily Loads (Regulation No. 93), and 2006 Monitoring and Evaluation List (Regulation No. 94).

January 4, 2006 Responsive Prehearing Statement of the Water Quality Control Division in the Matter of the 2006 List of Water-Quality-Limited Segments Requiring Total maximum Daily Loads (Regulation No. 93), and 2006 Monitoring and Evaluation List (Regulation No. 94).

January 4, 2006 Responsive Prehearing Statement of the United States Environmental Protection Agency; Region VIII; Public Rulemaking Hearing Before the Colorado Water Quality Control Commission Regarding Proposed Revisions to Commission Regulation No. 93, Water Quality-Limited Segments Requiring Total Maximum Daily Loads (5CCR 1002-93) and Regulation No. 94 Colorado's Monitoring and Evaluation List (5CCR 1002-94).

February 1, 2006 Rebuttal Statement of the Water Quality Control Division in the Matter of the 2006 List of Water-Quality-Limited Segments Requiring Total maximum Daily Loads (Regulation No. 93), and 2006 Monitoring and Evaluation List (Regulation No. 94).

February 1, 2006 Rebuttal Statement of the Colorado Division of Wildlife in the Matter of the 2006 List of Water-Quality-Limited Segments Requiring Total maximum Daily Loads (Regulation No. 93), and 2006 Monitoring and Evaluation List (Regulation No. 94).

February 1, 2006 Rebuttal Prehearing Statement of the United States Environmental Protection Agency; Region VIII; Public Rulemaking Hearing Before the Colorado Water Quality Control Commission Regarding Proposed Revisions to Commission Regulation No. 93, Water Quality-Limited Segments Requiring Total Maximum Daily Loads (5CCR 1002-93) and Regulation No. 94 Colorado's Monitoring and Evaluation List (5CCR 1002-94).

March 14, 2006 regulation entitled "Regulation #93 2004 Section 303(d) List Water-Quality-Limited Segments Requiring TMDLs" adopted March 14, 2004, effective April 30, 2006; Colorado Department of Public Health and Environment; Water Quality Control Commission.

March 14, 2006 regulation entitled "Regulation #94 Colorado's Monitoring and Evaluation List" adopted March 14, 2006, effective April 30, 2006; Colorado Department of Public Health and Environment; Water Quality Control Commission.